

THE RELATIONSHIP BETWEEN TODDLER NUTRITIONAL STATUS AND UPPER RESPIRATORY INFECTION DISEASE (ISPA) AT THE BAAMANG 1 SAMPIT HEALTH CENTER IN 2022

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Abstract. ARI is the main cause of mortality and morbidity from infectious diseases in the world. The ARI mortality rate reaches 4.25 million per year. Since 2020, the World Health Organization has observed ARI in infants aged 1-5 years, there have been 1,988 cases with a percentage of 42.91%. A large number of ARI phenomena in infants is due to several factors in the form of insufficient nutritional conditions, so they will be more exposed to ARI than babies who are nutritionally balanced so that the body's immune factor becomes minimal. This study aims to observe the relationship between the nutritional status of children under five and respiratory infections (ARI) at the Baamang 1 Sampit Health Center in 2022. This study uses an analytical type of assessment with a retrospective approach. The population in this study consisted of all sick babies at the Baamang 1 Health Center, a total of 415 children. The sampling technique used Simple random sampling in the form of all sick babies exposed to ISPA at the Baamang 1 Health Center with a total of 68 children. Based on test results The output of the chi-square test results was found to be 0.337 or above 0.05, so it was decided that there was no significant relationship between nutritional status and the phenomenon of ARI at the Baamang 1 Sampit Health Center in 2022.

Keywords: ARI, Toddlers, Nutritional Status of Toddlers

INTRODUCTION

According to Hartati (2011) says if "Acute respiratory infection (ARI) is an acute infection that attacks one or more parts of the airways, starting from the nose to the alveoli including adnexal tissue, such as sinuses, middle ear cavities and pleura which are classified into three parts namely severe acute respiratory infection (severe pneumonia) characterized by indrawing of the lower chest wall during inspiration, moderate acute respiratory infection (pneumonia) characterized by rapid respiratory frequency, namely under 1 year of age 40 times per minute or more but respiratory tract infection Mild acute (not pneumonia) characterized by cough, runny nose without rapid breathing and chest wall indrawing. The Indonesian Ministry of Health Health Research and Development Agency (2013) said "Most ARI is caused by infection, this disease begins with fever accompanied by one or more symptoms of sore throat or painful swallowing, runny nose, dry cough or phlegm".

Aprilla, Nia., et al, (2019) said that "toddlers are children who have reached the age of over one year or are more popular with the understanding of children under five years where children are still fully dependent on their parents to carry out important activities such as bathing, defecating water and food, the development of speech and walking has improved. But other skills are still not free. The toddler period is the main time at stage of individual development which determines the success of the child's development in the period. Through (WHO, 2020) says The mortality rate for ISPA reaches 4.25 million every year in the world, ISPA is still the main cause of morbidity and mortality from infectious diseases in the world. Since 2020 it has been known that ISPA in toddlers aged 1 to 5 years has a prevalence of 42.91%. Through assumptions, Sunarni (2017) says that "several factors that influence the prevalence of ARI in toddlers include intrinsic factors (gender, age, nutritional status of toddlers, immunization status, history of LBW) and extrinsic factors (occupancy density, inadequate ventilation, exposure to smoke, level of mother's knowledge, and behavior) in which malnourished toddlers are more at risk of developing ARI due to weak immune systems.

Through his elaboration, Wahab S. Ed (2016) said that "the incidence of ARI in infants and toddlers provides a more severe clinical picture, this is because ARI in infants and toddlers is generally the first infection event even before the optimal formation of the natural immune process, but adults have a lot of natural immunity more optimal as a result of the experience of frequent infections before.

The high prevalence of ARI in infants is due to several factors including minimal nutritional

conditions which are more easily exposed to ARI than infants with balanced nutrition, due to minimal body immunity. Efforts that can be carried out by the family so that the baby is not exposed to ARI include paying attention to the condition of the environment so that it is always hygienic, giving the baby breast milk, and completing immunization. But also home care is the main thing for managing children according to ISPA.

Through assumptions (Wulandari and Indra, 2013) say that "nutritional status is a person's nutritional status that can be seen to find out whether a person is normal or has problems (wrong nutrition) in the form of health problems caused by a deficiency or excess and or the balance of nutrients that are needed for growth, intelligence, and activity or productivity and can also be the result of a balance between the food that is put into the body (nutrient input) and the body's needs (nutrient output) for nutrients. A previous study carried out by Ranny, et al (2012) in the form of The relationship between malnutrition status and the incidence of Acute Respiratory Infection (ARI) showed that after an analysis of 54 toddlers, it was concluded that toddlers with undernourished status had a 10.947 times greater risk of developing ARI than toddlers with good nutritional status". So in harmony with the study carried out by 3 Trisni (2020) it showed that "out of 96 respondents it was found that most toddlers with undernourished status had experienced ISPA 77.5% while toddlers with good nutritional status mostly did not experience ISPA 51.8%. " So it shows if there is a strong link between nutritional status in the ISPA phenomenon.

The 2018 National Basic Health Research (Riskesdas) shows "the prevalence of ARI is 4.4% with the characteristics of the population experiencing the highest ARI being in the toddler age range of 25.8% and there are provinces which are included in the top five of the highest ARI, namely Papua 10, 0% Bengkulu 9.5% West Papua 7.5% East Nusa Tenggara 7.4% Central Kalimantan 6.0% East Java 5.5% Maluku 5.4% Banten 5.1% West Java 4.9% Central Java 4.9%, where the highest ISPA prevalence was observed in the one to four year age group, namely 13.7%. Data on the prevalence of ARI in infants by districts/cities in Central Kalimantan Province in the 2018 Basic Health Research showed that Kotim District was diagnosed with toddlers with the highest ISPA in Central Kalimantan with a total of 365 toddlers out of 2,086 toddlers with ISPA. Based on the results of observations of the community in the Baamang 1 Health Center area, cases of ARI are still found because residents lack knowledge about ARI, as well as habits that include smoking freely to be close to their families. And many patients come to the Puskesmas with the same complaint as the ISPA diagnosis. In addition, the working area of the Baamang 1 Health Center is a referral health center located in the Central Baamang sub-district, and so far the handling of ARI cases at the Baamang Tengah Health Center has been carried out as much as possible with counseling and treatment. Through this background, the author was encouraged to carry out a study on "The Relationship between Toddler Nutritional Status and Upper Respiratory Infection Disease (ARI) at the Baamang I Sampit Health Center in 2022".

METHODS

The assessment used is in the form of an analytical study of a retrospective approach. The population in this study consisted of all sick toddlers at the Baamang 1 Health Center totaling 415 children. The sample in this study was all sick toddlers affected by ARI at the Baamang 1 Health Center, a total of 68 children. Technique samples were taken using Simple Random Sampling. Data analysis used the chi-square test to see the relationship between nutritional status and the incidence of ARI.

RESULTS AND DISCUSSION

Obtaining a study held since November 2022 at the Bamaang 1 Health Center regarding "Relationship of Nutritional Status and Age with ARI Incidence at the Baamang 1 Sampit Health Center in 2022" for a total population of 415 and a sample of 68 children.

1. Univariate analysis

- a) Frequency of Nutritional Status with ISPA Incidence at the Baamang I Sampit Health Center in 2022.

Table 1. Frequency Distribution of Nutritional Status with ARI Incidence at the Baamang I Sampit Health Center in 2022.

Nutritional status	Frequency (F)	Percentage (%)
Fat	6	8.8 %
Normal	26	38.2%
Thin	36	52.9%
Amount	68	100%

Source: Secondary Data, 2022.

Based on Table 1, it can be seen that through the 68 people who were sampled, the majority of children under five based on nutritional status were thin nutritional status as many as 36 people (52.9%), and the minority of children under five based on nutritional status were obese nutritional status as many as 6 people (8.8%)).

- b) Frequency distribution of the age of toddlers with the incidence of ISPA at the Baamang I Sampit Health Center in 2022.

Table 2. Frequency distribution of the age of toddlers with the incidence of ISPA at the Baamang I Sampit Health Center in 2022.

Toddler	Frequency (F)	Percentage (%)
Age > 1 year	18	26.4%
Age 1-3 years	30	44.1%
Age 3-5 years	20	29.4%
Amount	68	100%

Source: Secondary Data, 2022.

Table 2 shows that of the 68 people who were sampled, the majority of toddlers aged 1-3 years were 30 people (44.1%) and a minority of toddlers aged > 1 year were 18 individuals (26.4%).

- c) Distribution of the frequency of ARI incidents at the Baamang I Sampit Health Center in 2022.

Table 3. Distribution of the frequency of ARI incidents at the Baamang I Sampit Health Center in 2022.

ARI incident	Frequency (F)	Percentage (%)
Severe Pneumonia	24	35.2%
Pneumonia	29	42.6%
Not Pneumonia	15	22.0%
Total	68	100%

Source: Secondary Data, 2022.

Table 3 shows that through the 68 people who were sampled, the majority of children under five based on the incidence of ARI were 29 people with pneumonia (42.6%) and the minority of ARI cases were 15 people with non-pneumonia ARI and 15 people (22.0%). Through the results of the study, table 3 shows that of all the samples used, all toddlers with incidents at the Baamang I Sampit Health Center, Kotawaringin Timur Regency, Central Kalimantan Province in 2022 show that the frequency of toddlers with nutritional status from 68 samples is 6 people (8.8%) with obese nutritional status, normal nutritional status of 26 individuals (38.2%) and thin nutritional status of 36 individuals (53%).

The majority of the frequency of toddlers based on nutritional status in the ISPA phenomenon at the Baamang I Sampit Health Center, Kotawaringin Timur Regency, Central Kalimantan Province in 2022, namely toddlers with thin nutritional status, a total of 36 individuals (53%). The nutritional status of toddlers has a major impact and is strong for medical services including the implementation of posyandu plans. Through (Maulana, 2013) "The more perfect the nutrition is given, the more perfect their brain and physical development will be."

2. Bivariate Analysis

This is to observe the relationship between nutritional status in the form of the independent variable and the dependent variable, namely the ISPA phenomenon, carried out using the Chi-Square statistical test. Obtained variable analysis in the form of.

Table 4. Connection Nutritional Status with ISPA Incidents at the Baamang 1 Sampit Health Center in 2022.

Nutritional status	Isp incident							
	Severe Pneumonia				With pneumonia		Not Pneumonia	
	(F)	(%)	(F)	(%)	(F)	(%)	(F)	(%)
Fat	6	8.8%	2	2.9%	2	2.9%	2	2.9%
Normal	26	38.2%	10	14.7%	12	17.6%	4	5.9%
Thin	36	53%	10	14.7%	13	19.3%	13	19.1%
Amount	68	100%	22	32.3%	27	39.8%	19	27.9%

Source: Secondary Data, 2022.

Table 4 shows 68 toddlers based on the nutritional status of the ARI phenomenon, namely the majority of toddlers with the ARI phenomenon with severe pneumonia with normal nutrition are 10 people each (14.7%). While the majority of toddlers with ISPA with pneumonia based on thin nutritional status were 13 people (19.3%). Then the majority of toddlers with ARI incidents not with pneumonia based on thin nutrition were 13 people (19.1%). After the assessment data was managed, a data test was carried out to test the link between nutritional status and ISPA incidence at the Baamang I Sampit Health Center in 2022 using the chi-square test.

Table 5. The results of the Chi-square test for the relationship between nutritional status and the incidence of ARI at the Baamang I Sampit Health Center, East Kotawaringin Regency, Central Kalimantan Province, in 2022.

Chi-Square Tests						
	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.175a	2	,337	,361		
Likelihood Ratio	2.172	2	,338	,361		
Fisher's Exact Test	2.158			,335		
Linear-by-Linear Association	2,016b	1	,156	,191	,109	.055
N of Valid Cases	68					

a. 2 cells (33.3%) have an expected count of less than 5. The minimum expected count is 2.56.

b. The standardized statistic is -1.420.

Table 5 shows the results of the test. The output of the chi-square test results at a significance level of 5% ($\alpha = 0.05$). If the p value $< \alpha$ (0.05), H_a is rejected and H_o is accepted, meaning that there is no relationship between the independent and dependent variables, sig. (2-tailed) some 0.337 or above 0.05, it was decided that there was no significant relationship between nutrition in the ISPA phenomenon at the Baamang I Sampit Health Center, Kotawaringin Timur Regency, Central Kalimantan Province in 2022.

Through the acquisition of table 5, it shows that of all the samples used, all toddlers with ARI incidents at the Baamang I Sampit Health Center, Kotawaringin Timur Regency, Central Kalimantan Province in 2022 show that the frequency of toddlers out of 68 samples is 22 toddlers (32.3%) toddlers with incidents ARI pneumonia was severe and there were 27 toddlers (39.8%) with ARI with pneumonia and 19 toddlers (27.0%) with ARI without pneumonia. The majority of children under five based on the incidence of ARI were ARI with pneumonia as many as 27 people (39.8%) and a minority of ARI cases were ARI without pneumonia as many as 19 people (27.0%). So it is inconsistent with the study conducted by Tenri Aman (2022) entitled "Characteristics of Suffering from ARI in Toddlers in the Working Area of the Kalumata Health Center, Ternate City, where research findings show that toddlers diagnosed with ARI are not pneumonia, the proportion is greater than ARI diagnosed with pneumonia".

Through (Ministry of Health RI, 2011) "Acute Respiratory Infection (ARI) is a major health problem in Indonesia because there is still a high incidence of ARI, especially in children under five caused by infection, this disease begins with fever accompanied by one or more symptoms of a sore throat. or swallowing pain, runny nose, dry cough, or phlegm".

Through (Maulana, 2013) "The nutritional status of toddlers has a strong and important influence in terms of health services including the implementation of the posyandu program where the more perfect the nutrition provided the more perfect their brain and physical development will be." This study is inconsistent with the study conducted by Siti Nurchayati et al (2015) who said that "there is a relationship between the nutritional status of toddlers and the incidence of ARI, the results show that the nutritional status of toddlers is getting better. given the more perfect their brain and physical development". The researcher's analysis is related to the absence of a relationship in the research that has been done, this means that nutritional status will affect the response to toddler development. However, this does not mean that only nutrition has an influence, bearing in mind that there are still many things that affect ARI, supported by the theories and research that have been previously listed.

CONCLUSION

Through the assessment in this study, it can be concluded that based on test results The output of the chi-square test results at the significance level is 5% ($\alpha = 0.05$). That is, the p-value obtained was 0.337 or greater than 0.05, so it was decided that there was no significant relationship between nutritional status and the incidence of ARI at the Baamang I Sampit Health Center, Kotawaringin Timur Regency, Central Kalimantan Province in 2022.

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